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GEMINI GM555 CP/M 2.2 FOR MULTIBOARD-BASED SYSTEMS

This package consists of:-

1 - Serialised GM555 CP/M 2.2 Master System Diskette
1 - Digital Research Registration Form
1 - Digital Research Software Licence Agreement
1 - Digital Research CP/M Operating System Handbook
1 - Digital Research Command Summary Booklet
1 - Gemini GM555 Registration Form
1 - GM346 BIOS Vesion 3.2 Manual

Upon opening this package the Software Licence Agreement should be read carefully. If you do not agree to the terms contained then the complete GM555 package should be returned to your Dealer. If you do agree to the terms then the Digital Research and Gemini registration forms MUST be completed and returned to Gemini Computer Systems Ltd, who will forward the relevant information to Digital Research Inc.

Gemini Computer Systems will hold GM555 User details on file and may circulate information on updates and any software packages available from Gemini distributors and other sources from time to time. Please note that Gemini can only supply this information if the form below is returned.

Your CP/M master diskette has been verified by Gemini. This diskette should be copied by the user and then stored in a safe place. Under no circumstances should the write-protect tab be removed. After copying the master disk should not be used. If the master diskette becomes corrupted it should be returned to Gemini Computer Systems Ltd for replacement. There will be a charge for this service.

The supplied Master System Diskette has been configured for Micropolis drives, Gemini QDDS format. If your system is different to the above, you should make a copy of this System Master Diskette and use the copy to generate a system to meet your requirements - please refer to Section 3 of your BIOS manual.

GM555 - BIOS 3.2

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CP/M Serial Number (on Master Diskette): 2-248-02904

Distributor from whom purchased: Gemini

Date of purchase: 6-OCT-86

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I M P O R T A N T

This CP/M package contains Gemini BIOS Version 3.4. This has been developed for use with the new GM849 FDC/SCSI controller board. The design of the Gemini GM849 board is derived from the earlier GM829 board, which itself was derived from the GM809 board. One of the reasons for the change from GM829 to GM849 was because the floppy disk controller chip used on the former was becoming very difficult to obtain. Consequently a later, and more advanced device has been used in the GM849 design. At the same time a number of other improvements have been made.

Unfortunately, from a software point of view the GM849 is NOT identical to the earlier GM809 FDC card and GM829 FDC/SASI card.

All Gemini CP/M packages (BIOS Version 3.3 or later) and SIMON boot ROMs (Version 4.0 or later) have now been modified to support the GM849 board. In fact they will now automatically detect whether the board is GM809/GM829 or GM849, and act accordingly. Note that all RP/M ROMs and all SIMON ROMs, regardless of version number, will operate correctly with all FDC boards if only floppy disk drives are in use. SIMON Version 4.0 (or later) will have to be purchased for systems equipped with Winchester drives and GM849 boards.

If you are already using Gemini systems based on the GM809 or GM829 boards you must take care to ensure that none of the Gemini CP/M Operating Systems that you purchased for use with those systems are used with any systems using the GM849 board as this will result in incorrect operation. Although the Gemini CP/M that you purchase for use with the GM849 will operate correctly with the earlier systems we recommend that you should:

ONLY USE THE CP/M THAT YOU PURCHASED FOR EACH GEMINI SYSTEM WITH THE SPECIFIC GEMINI SYSTEM THAT IT WAS PURCHASED FOR.

Documentation

The features of the BIOS Version 3.4 supplied with your CP/M are fully described in the GM346 CP/M-80 BIOS V3.2 manual accompanying your system, with the following differences.

BACKUP (Page 27)

The BACKUP program contained its own FDC board drivers, and these are not compatible with the new GM849 board. Further, the BACKUP program could only copy from one disk to another of identical format, whereas with all Gemini CP/Ms of BIOS V3.2 or later, disks may be different formats. This utility program is therefore no longer supplied, and the user should use PIP.COM and, where necessary, GENSYS.COM in order to create backup copies of disks.

FORMAT (Page 26)

In order to support the new GM849 board (as well as GM809/GM829), the FORMAT.COM program has had to be modified. At the same time as doing these modifications the program has been considerably enhanced, and this section describes operation of the new FORMAT.COM program.

The new FORMAT program will format and/or verify disks in any format supported by the supplied BIOS, provided that the disk drives fitted to the system are themselves capable of supporting those formats. (i.e. you cannot format double sided disks if you only have single sided drives!!)

On running FORMAT it will clear the screen and put up the sign-on message:

Gemini BIOS 3 Format Program Version 0.1

It will then examine the running CP/M system to see what disk formats and drives it is configured for, and put up a display showing this information. e.g.-

Drv	(Phys)	Format
A	0	QDDS
B	1	QDDS
C	2	QDDS
D	2	QDSS
E	3	DDDS

Select with ↑ ↓ then press RETURN
Press <ESC> to Exit

One of the lines of the display will be highlighted in inverse video, and this is the drive and format that will be selected when the RETURN key is pressed. If you wish to exit from the FORMAT program, then the ESC key will return you to CP/M. Pressing either the cursor-up or cursor-down key will select another format/drive combination. Note that any CP/M drives that correspond to a Winchester drive (if fitted) will not be displayed.

The information given is:

Drv - the CP/M logical drive reference to the format that you have chosen

Phys - the physical drive address of the drive you are selecting

Format - the floppy disk format type that will be used

Note that it is possible to have more than one logical drive (A:, B: etc) referring to the same physical drive (first floppy drive, second, etc) and that the actual format to used (QDDS, DDDS etc) may vary also. You are referred to the GM346 BIOS V3.2 manual for a more detailed description of this flexibility.

Once the required format/drive combination has been selected, and the RETURN key pressed, the display will clear and a message such as:

Drive is B [1] Format is QDDS

will confirm the selected combination.

At this point the software will check that the track density of the drive is the same as that of the requested format. If it finds that you wish to format a 48tpi format on a 96tpi drive then a warning will be displayed.

**** WARNING ****

Drive x is being double stepped to support this format.
If you are unlucky read errors may occur when a disk
formatted in this manner is read on a true 48 tpi drive.

The reason for this is described on pages 15 and 36 of the GM346 manual.

The program will then check whether or not there is a floppy disk inserted in the relevant drive. If not the system will display the message:

Insert the Disc in the drive

Once a disk is present the display will clear, and at the bottom of the screen will be the message:

F to Format, <ESC> to exit, any other key to Verify

a) Pressing the ESC key will result in the program returning to the main menu.

b) Pressing the F key will result in the screen clearing to:

Formatting

Track -> xx

Press <ESC> to abort

where xx will increment, starting from 0, as each track is formatted. The formatting sequence may be stopped at any point by pressing the ESC key. However, note that this will result in a disk that is only partially formatted.

Once the formatting sequence is completed (or aborted by ESC) the program will then go into the Verification phase as described in c) below.

c) Pressing any key other than F or the ESC key (for example the SPACE bar is very convenient) will result in the display changing to:

Verifying

Track -> xx

Press <ESC> to abort

where xx will increment, starting from 0, as each track is verified.

If there are any verification errors then the display will show them. e.g.

```
Track 4 Sector 0 Side 0  CRC CRC
Track 5 Sector 1 Side 1  DNR
```

During the verification phase the software will report any time that it has to re-read a sector, and also displays the error type returned by the disk controller. After four retries on a specific sector the head is restored to track 0 and the software tries again. Once the retry count reaches eight that sector is considered unreadable and is abandoned, the software moving on to the next sector. At this point the message:

<<<Bad<<<

will be displayed alongside the sector giving the error.

Ideally no retries should occur, but possibly one or two might. Any disk that produces a large amount of retries should be regarded with suspicion, and any one that has an unreadable sector should not be used. In either of these cases it may be worth trying to format the disk again.

Once verification has started it may be abandoned by pressing the ESC key. This is the best course of action if many sectors are being reported as bad, as this probably indicates that either the disk is unformatted, or has been formatted to a different format to the one that is being verified. Pressing ESC will return to the prompt:

F to Format, <ESC> to exit, any other key to Verify

When Verification is complete it will also return to the above prompt, unless there have been any errors, in which case these will remain on the display, along with the message:

```
***Verification complete***
 Type <RETURN> to continue
```

Pressing the RETURN key at this point will also take you back to the prompt:

F to Format, <ESC> to exit, any other key to Verify

Once back to this point any of the options may be repeated on the same disk, or on a new disk.

Pressing the ESC key will return you to the main menu. Here a new format may be selected, and the above process repeated, or the ESC key may be pressed again to return you to CP/M.
